MEMORANDUM

DATE: August 9, 2017

RE: Dioxin at Des Moines TCE Site

BY: Dave Williams, Chief, Response and Removal North

TO: File

At the request of Mary Peterson, Director, Superfund Division, I have reviewed the dioxin levels documented during the June 2016 sampling event and have the following observations:

1. Nanograms/kilogram = parts per trillion

2. **I don't know of any standards for wipe sampling for dioxin**. I would think of those results as presence/absence. So the wipe sample results indicate what I would consider a trace amount of dioxin in 11 of 22 sample locations (floors, walls, beams, sheet metal, brick, etc).

3. **Residential soil screening level** for dioxin TEQs is 50 ppt.

4. **Former Times Beach/Route 66** reassessment site-specific health based standard was in the 620-660 ppt range, depending on the scenario.

5. **Ellisville** site-specific health based standard was 820 ppt, and assumed a youth recreational scenario.

6. **"Building material" results**: 6 of 24 samples exceeded 50 ppt; the rest were less than 50 ppt. The highest value was 740 ppt.

7. **Concrete results**: 7 of 22 samples exceeded 50 ppt; the rest were less than 50 ppt. The highest value was 1,500 ppt

8. **Soil sample results**: none of the roughly 66 soil samples exceeded 50 ppt.

9. **First take on conclusions**:

    a. Soil is fine, all below screening levels for TEQs.
    b. While there are a few concrete or building material samples above a residential soil screening level of 50 ppt, I highly doubt that these concentrations would present a human health risk if left on site, or that they would present a leachability issue in a landfill.
    c. Once the building was demolished, the receiving disposal facility would likely require one or more composite samples of the resulting rubble pile, including a dioxin TEQ concentration. Based on the existing data, the resulting dioxin TEQ numbers would likely be in the 50-100 ppt range or less.

d. For the Strecker/Ellisville action, we were able to take soil to a Subtitle D landfill in Missouri that was in the 50 ppt range. I don't know what their upper limit was.
e. In addition, we were able to take up to about 4,000 ppt to a TSCA landfill in Oklahoma.
f. Based on the data, there are no soil disposal issues related to dioxin. For the building material and concrete, one would probably just need to check with landfills being considered for their acceptability, as well as the receiving state where that material was going.